

Figure 1a

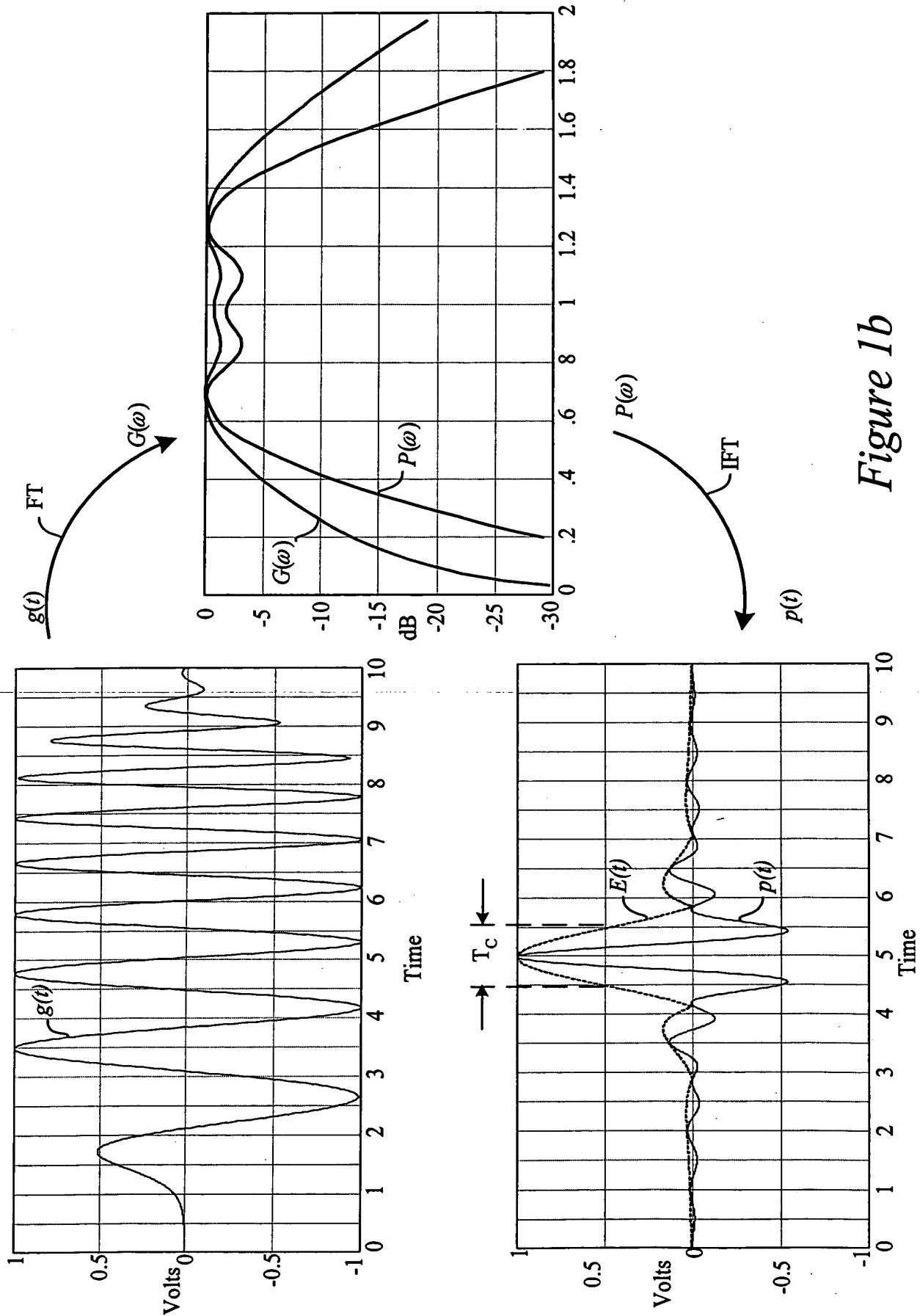


Figure 1b

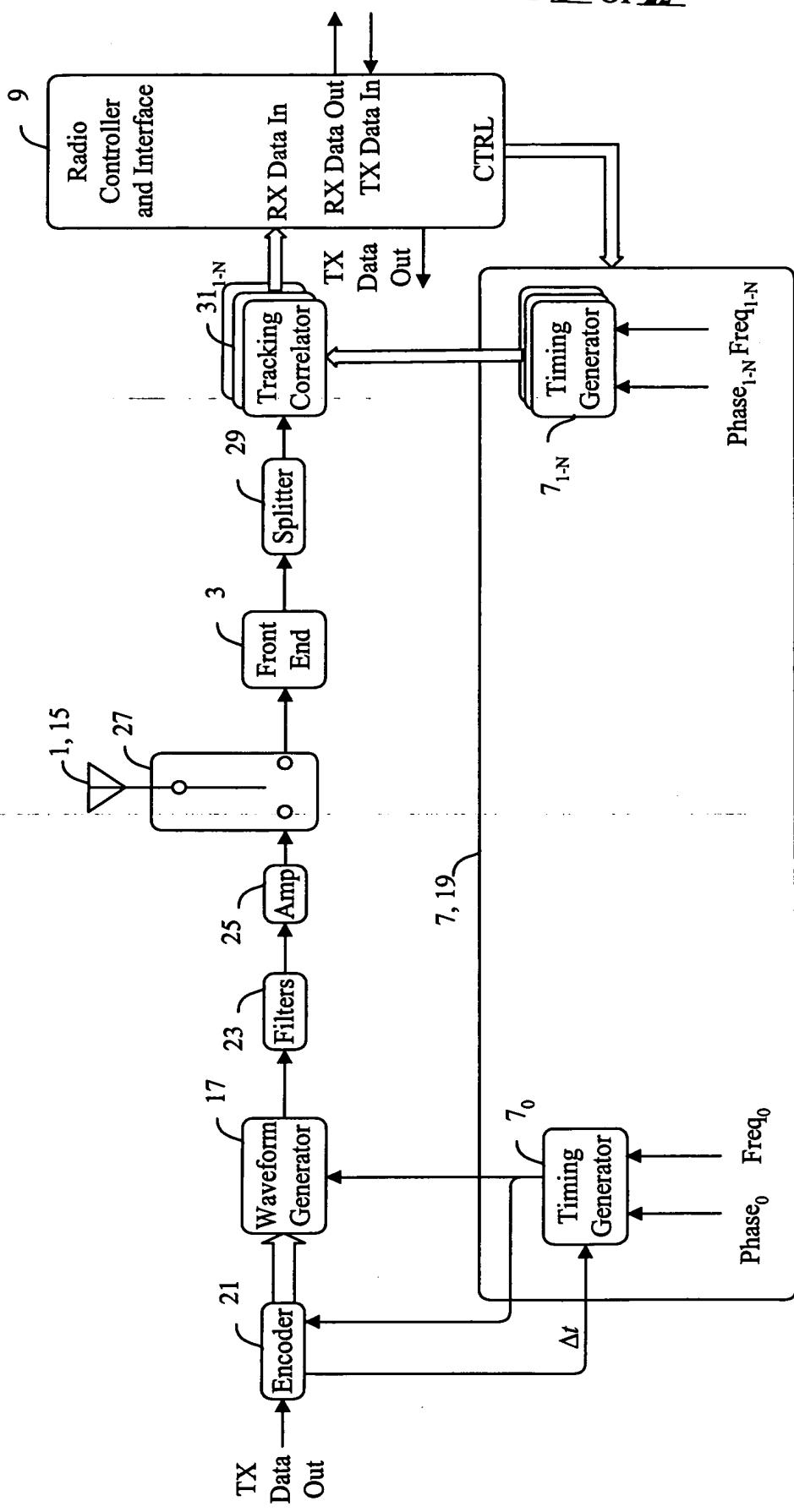


Figure 2

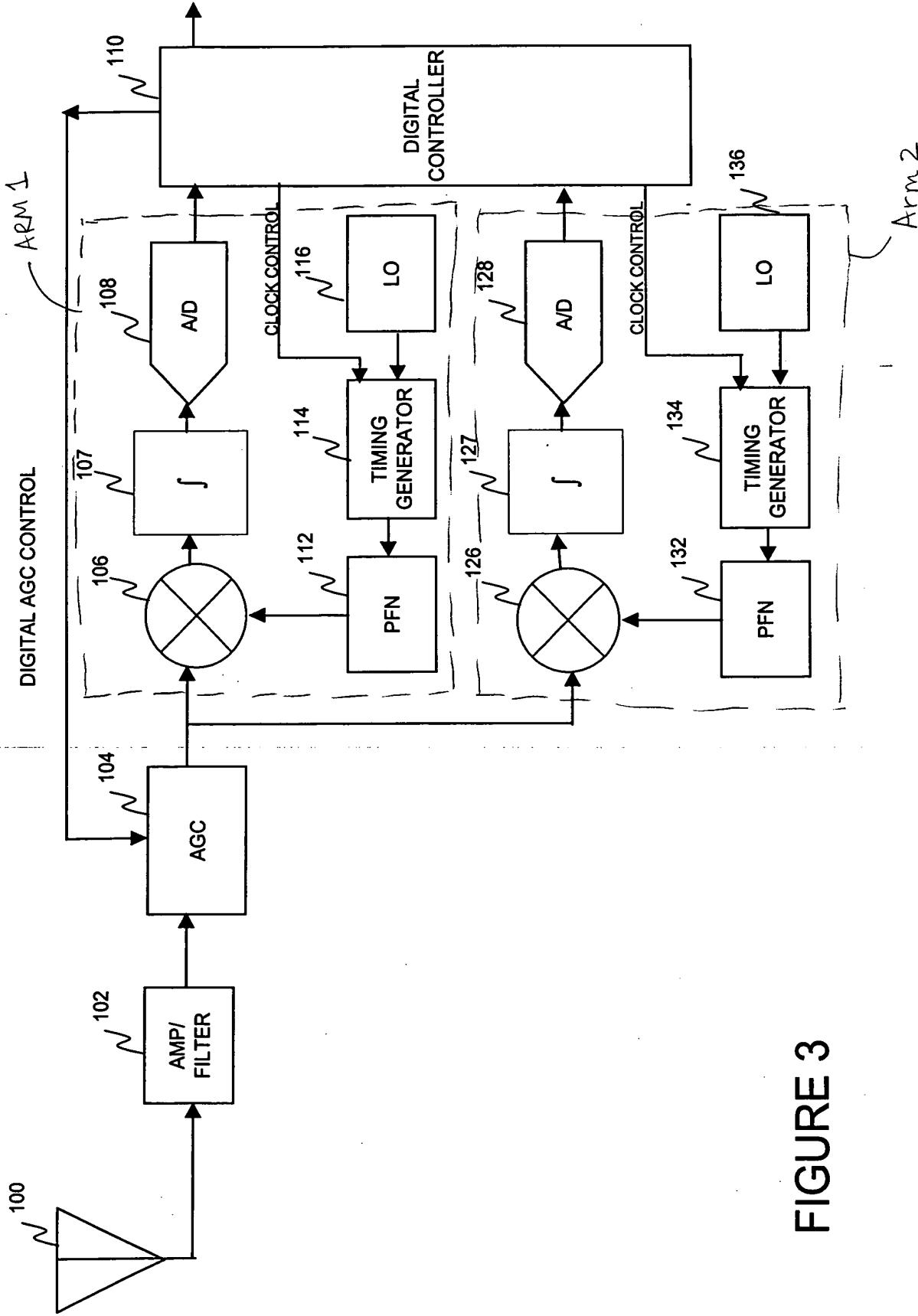


FIGURE 3

FIG. 4A

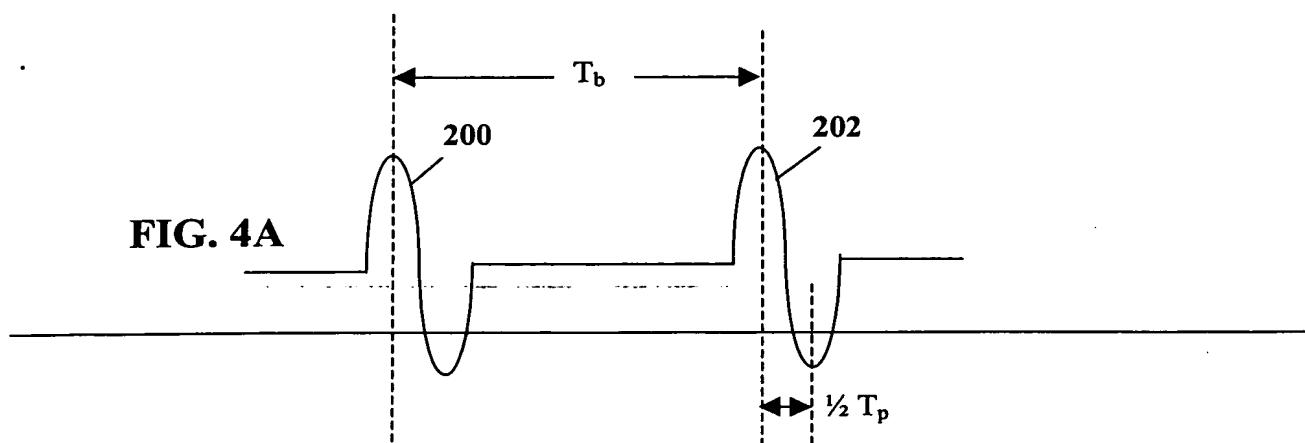


FIG. 4B

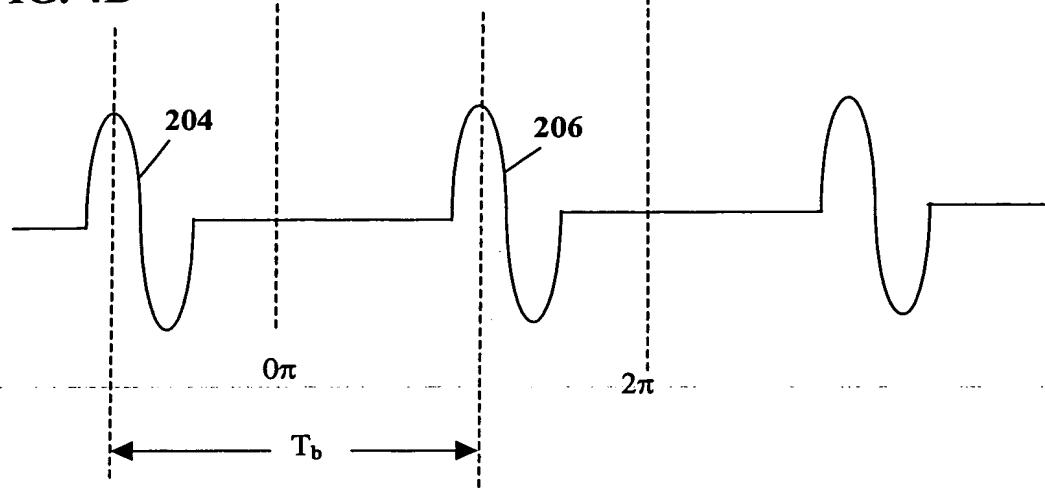
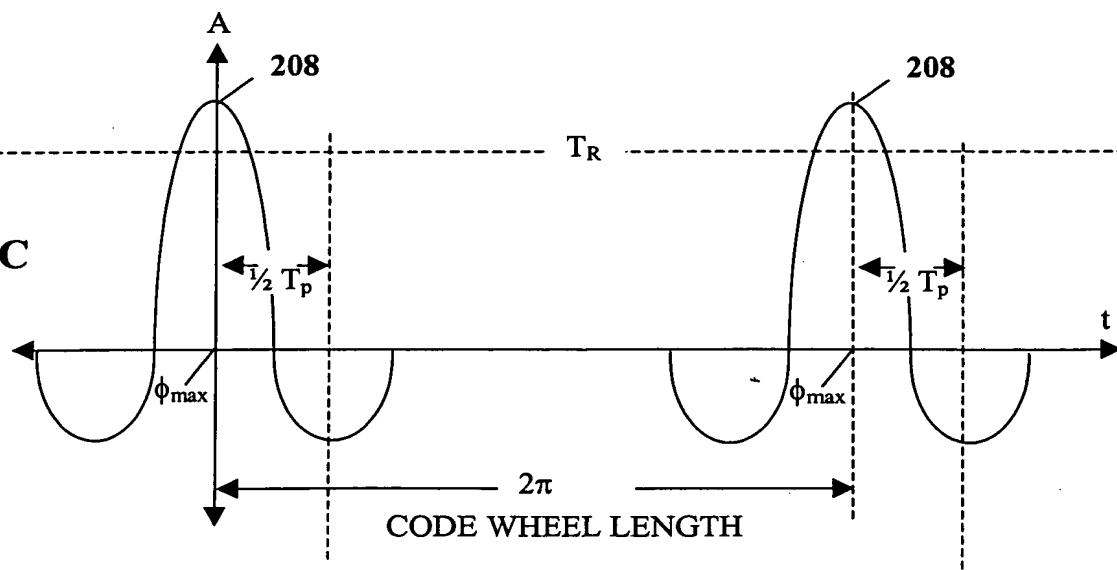


FIG. 4C



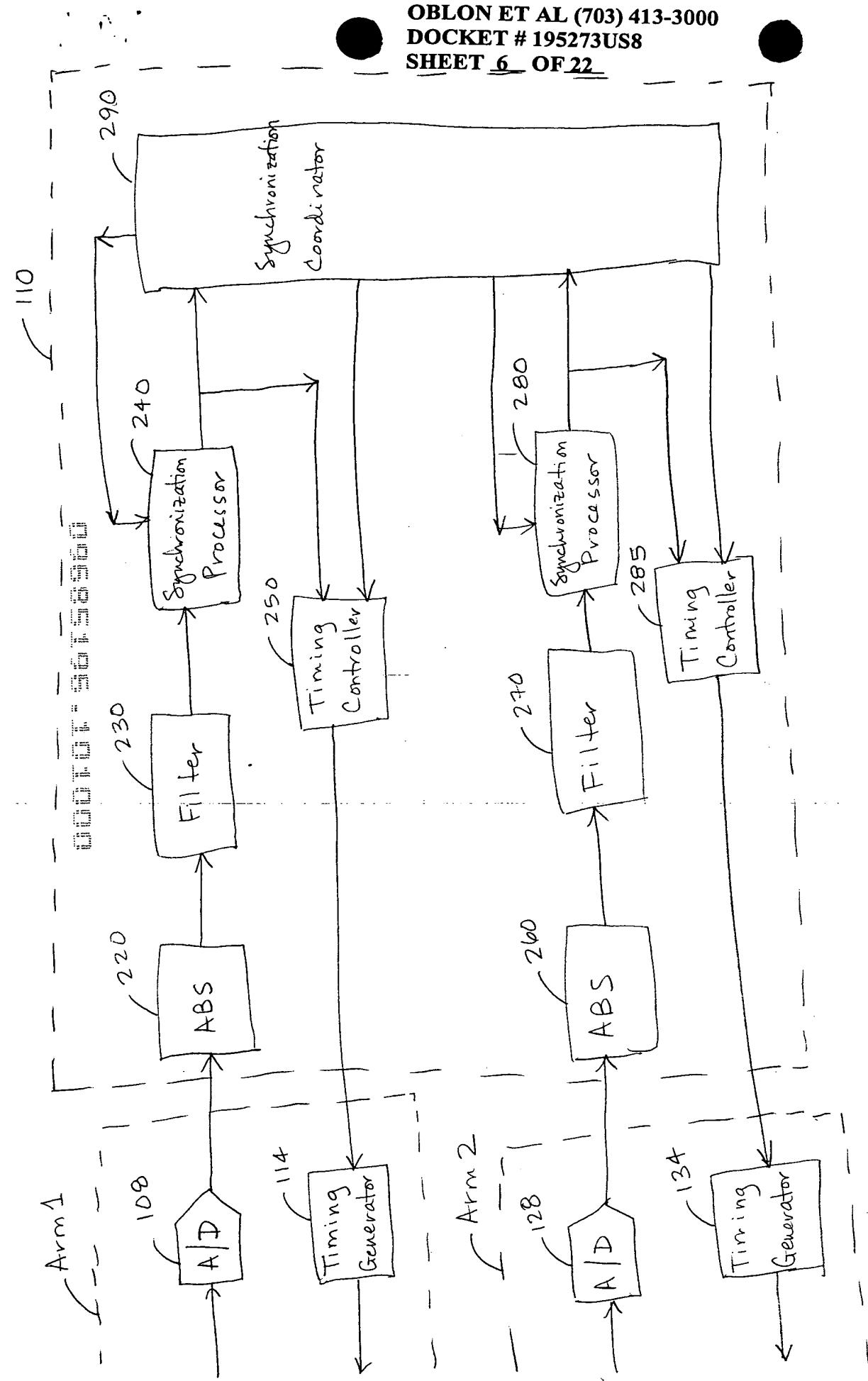


Fig 4D

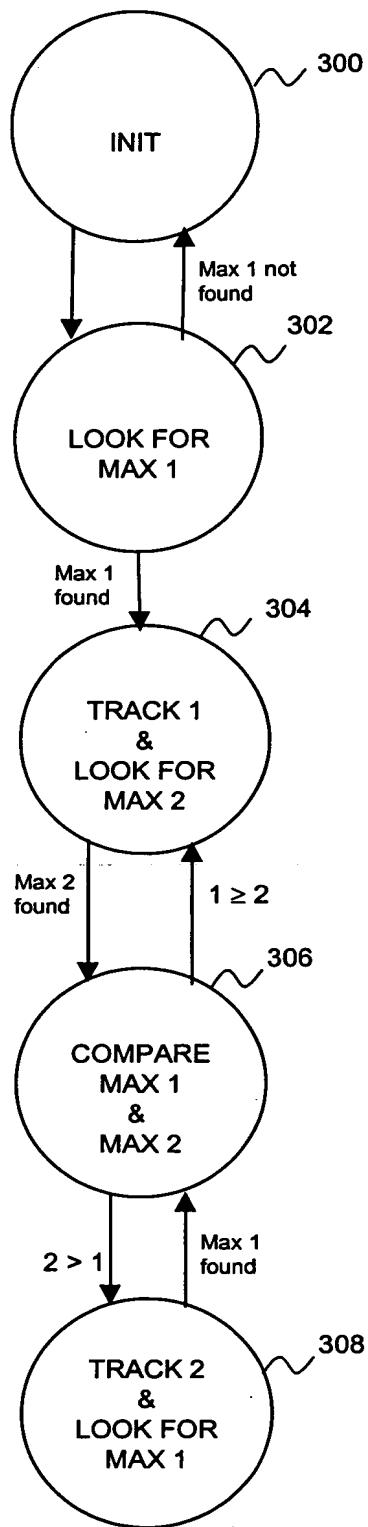


FIGURE 5

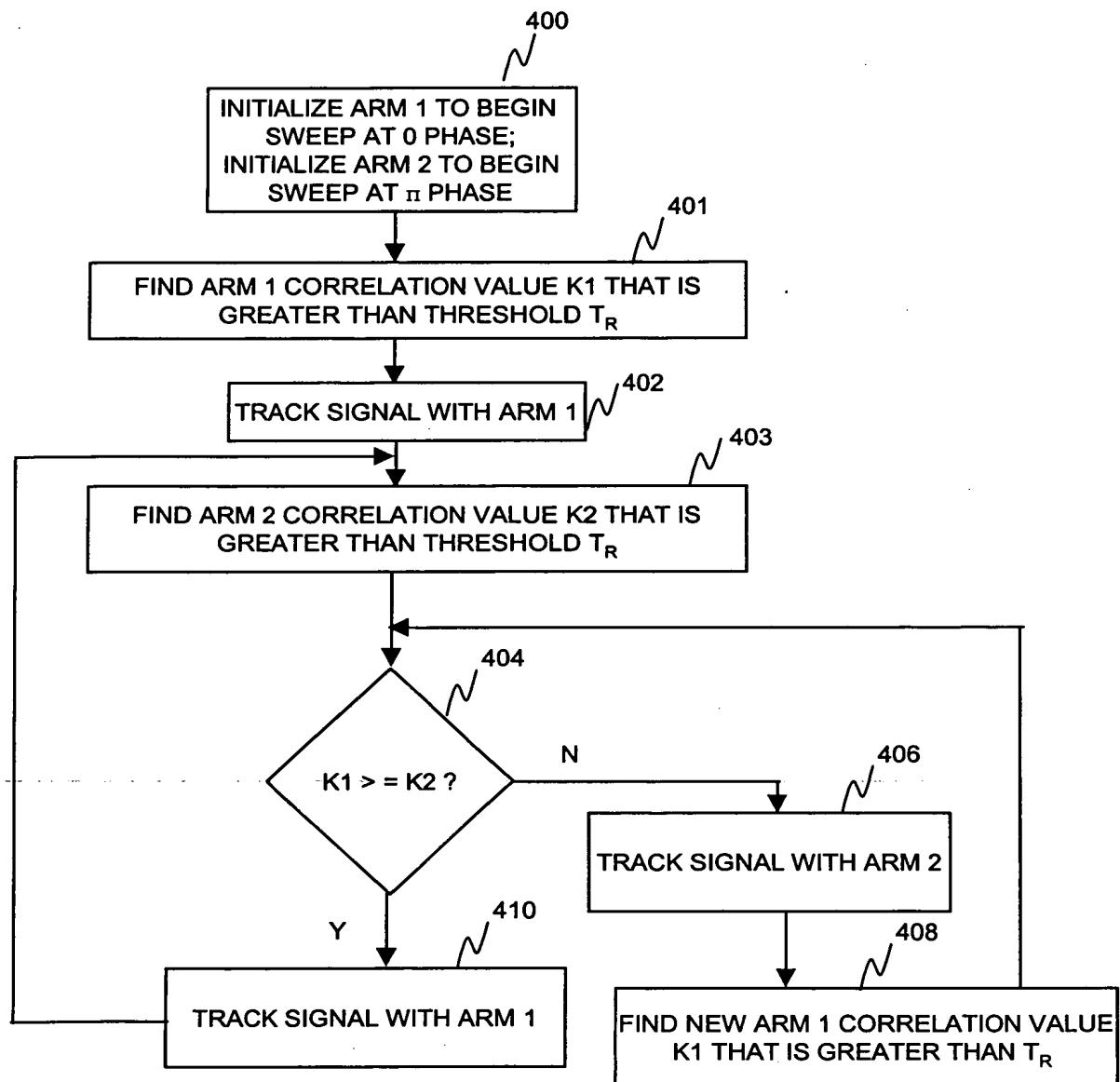
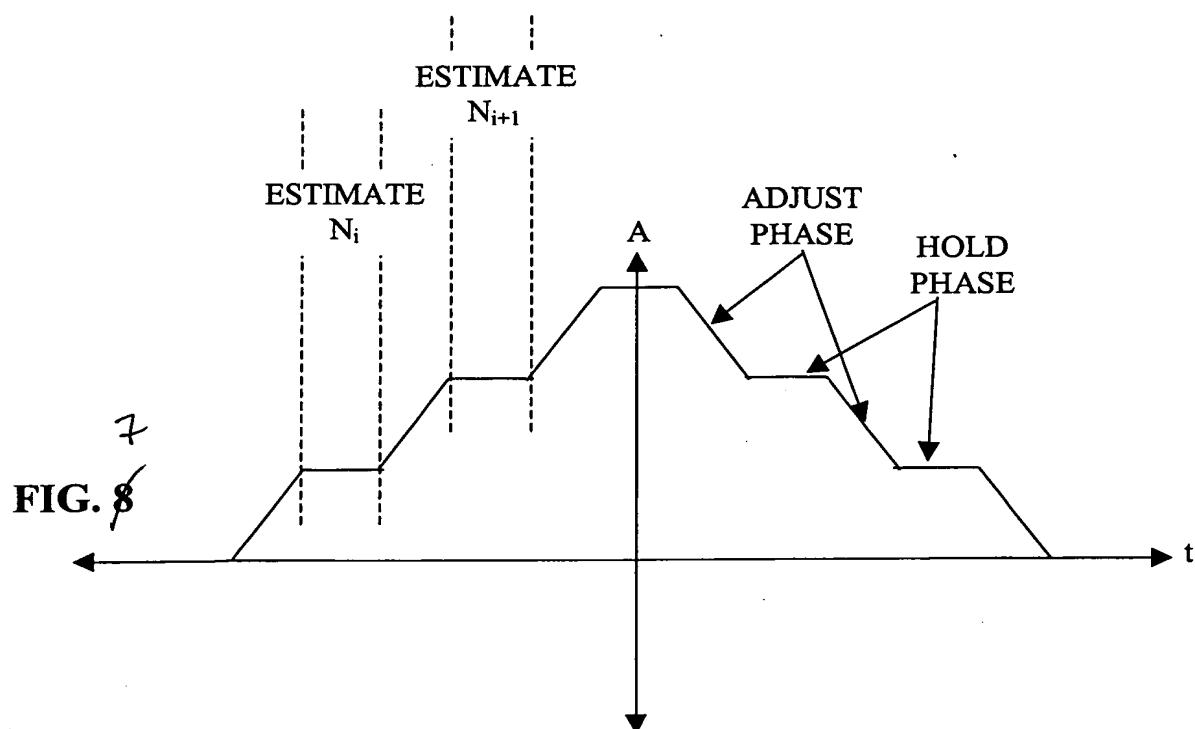
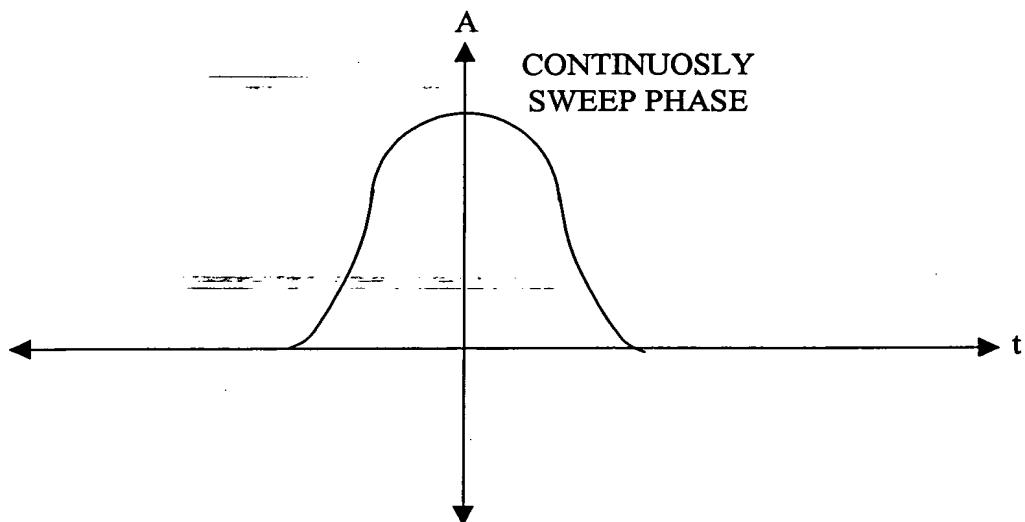


FIGURE 6



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FIG. 9



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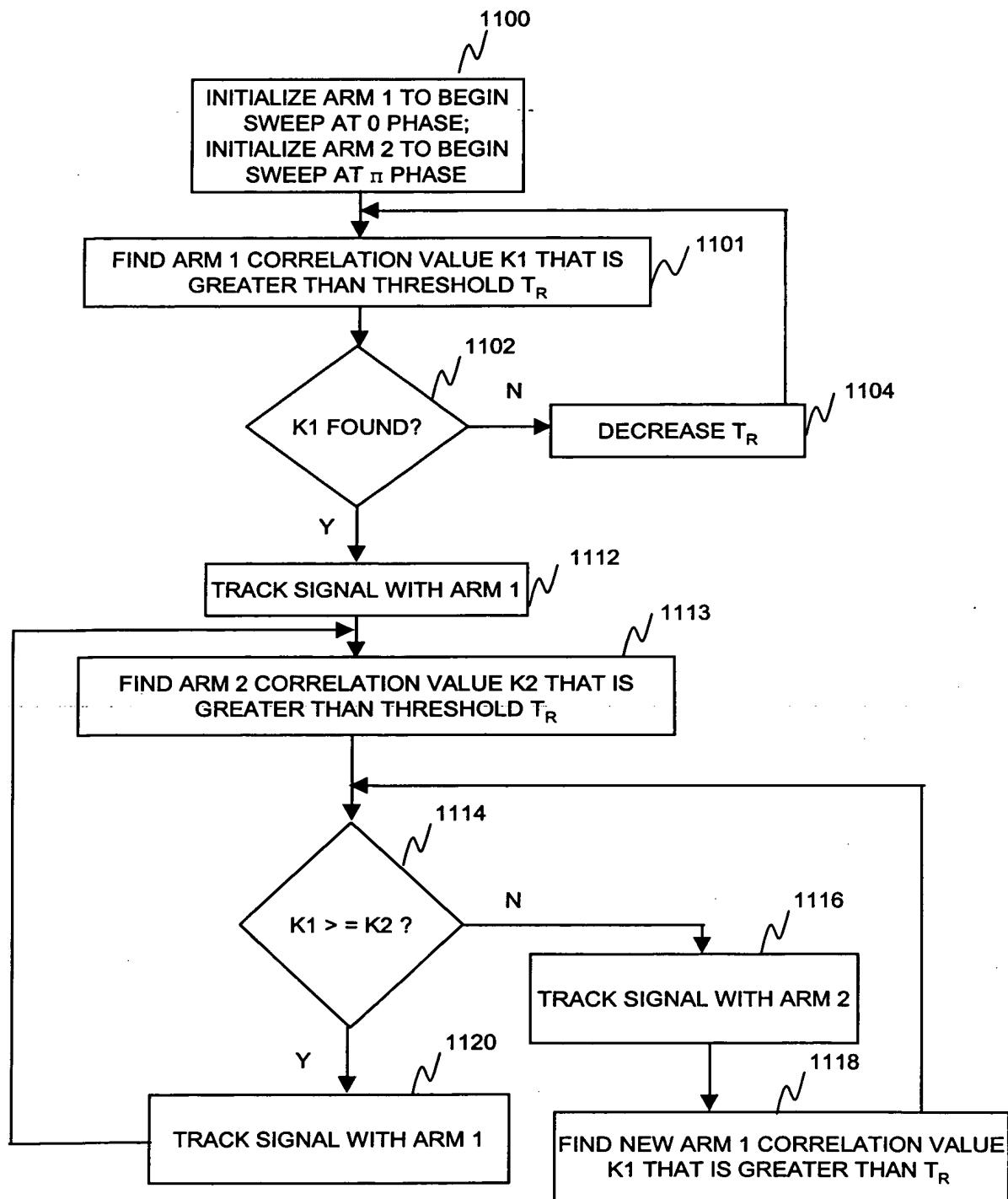


FIGURE 9

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SHEET 12 OF 22

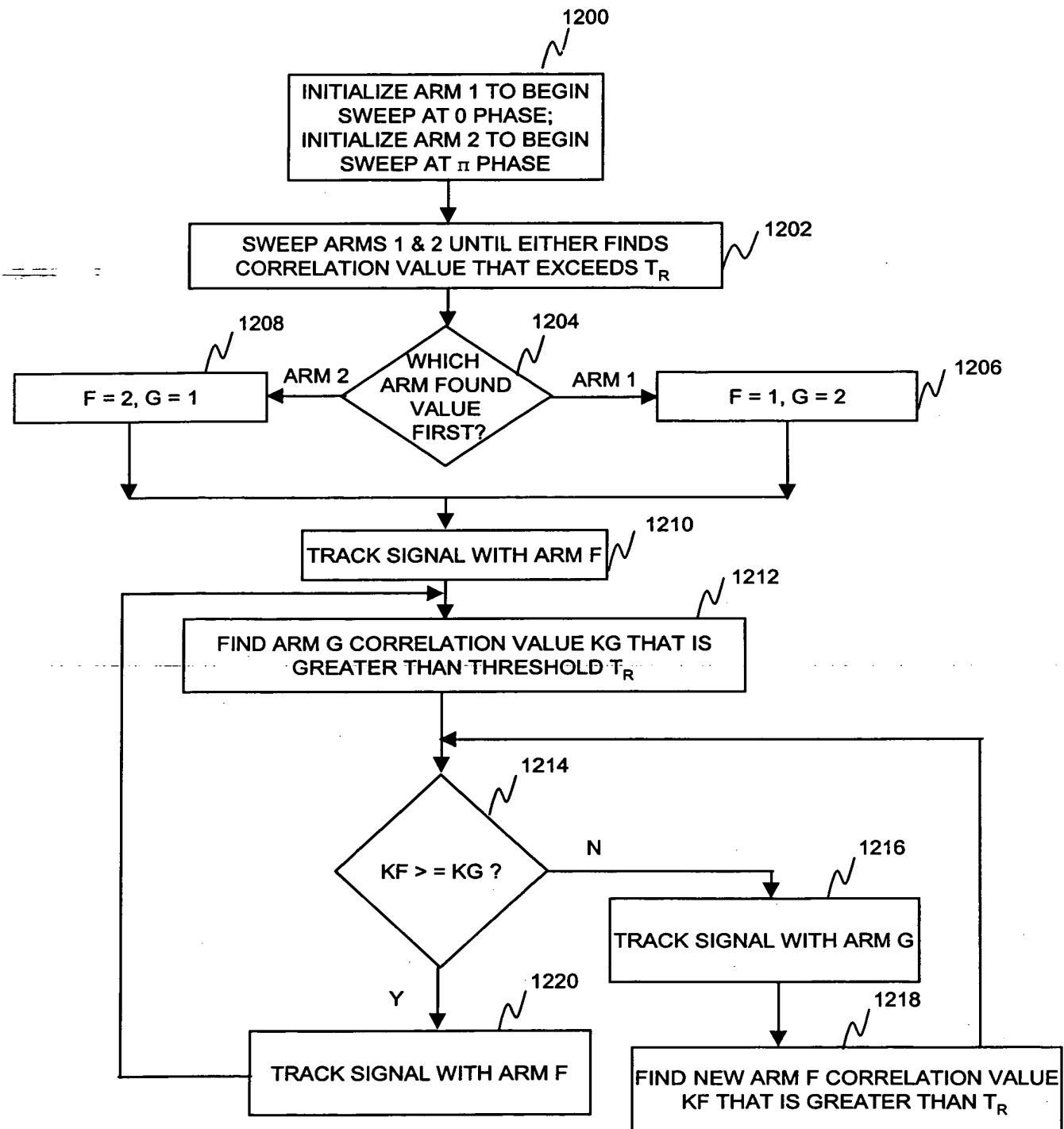


FIGURE 10

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SHEET 13 OF 22

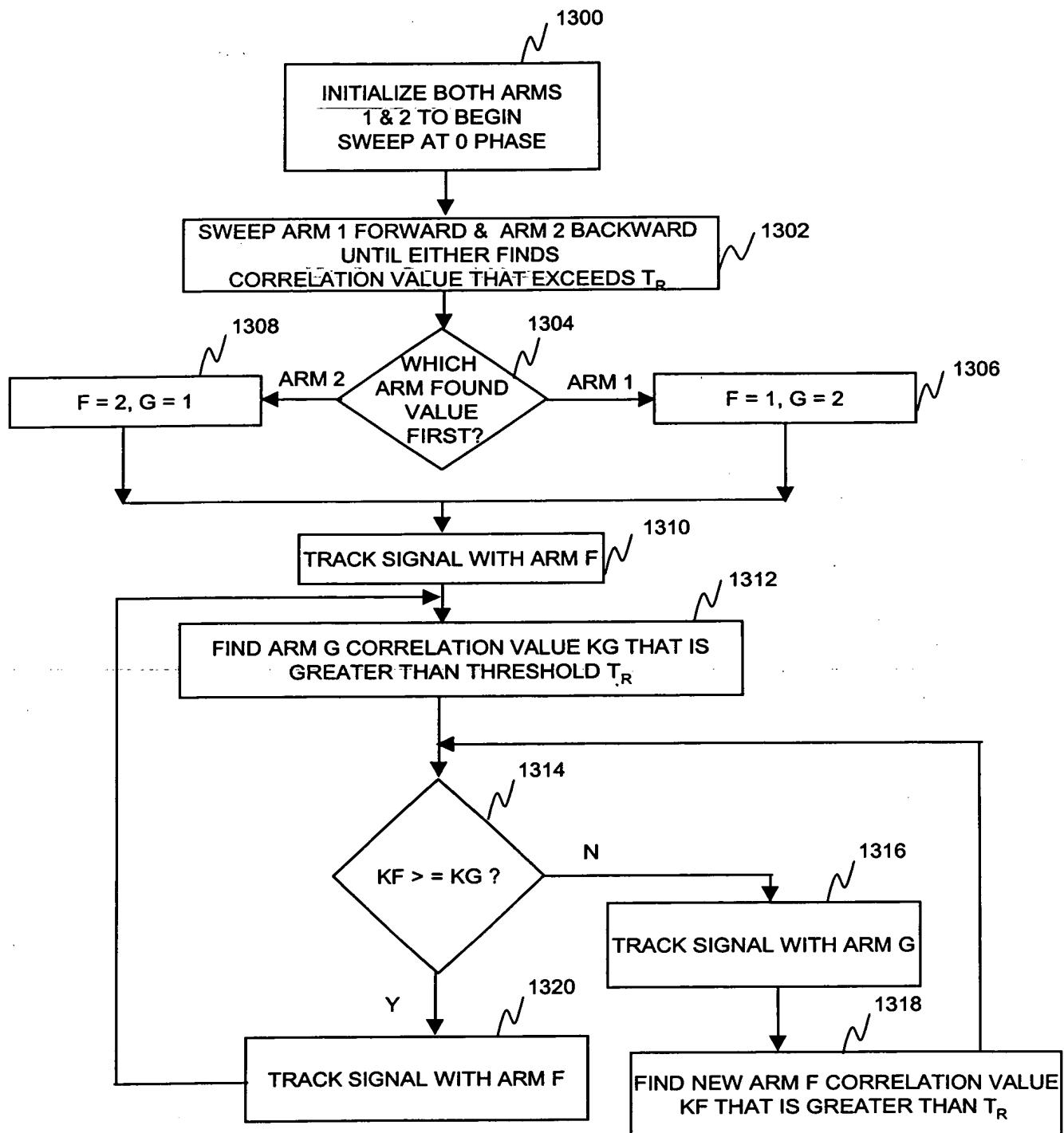


FIGURE 11

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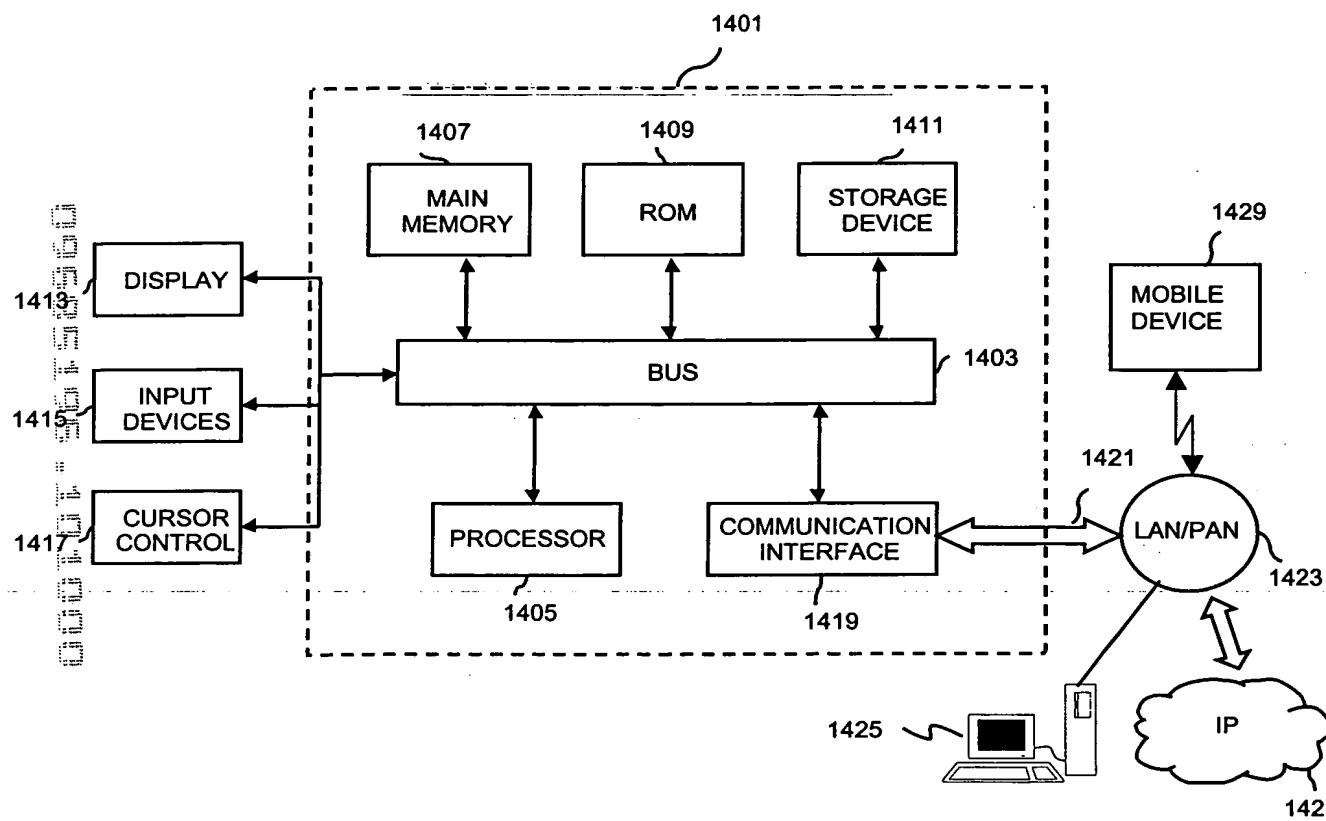
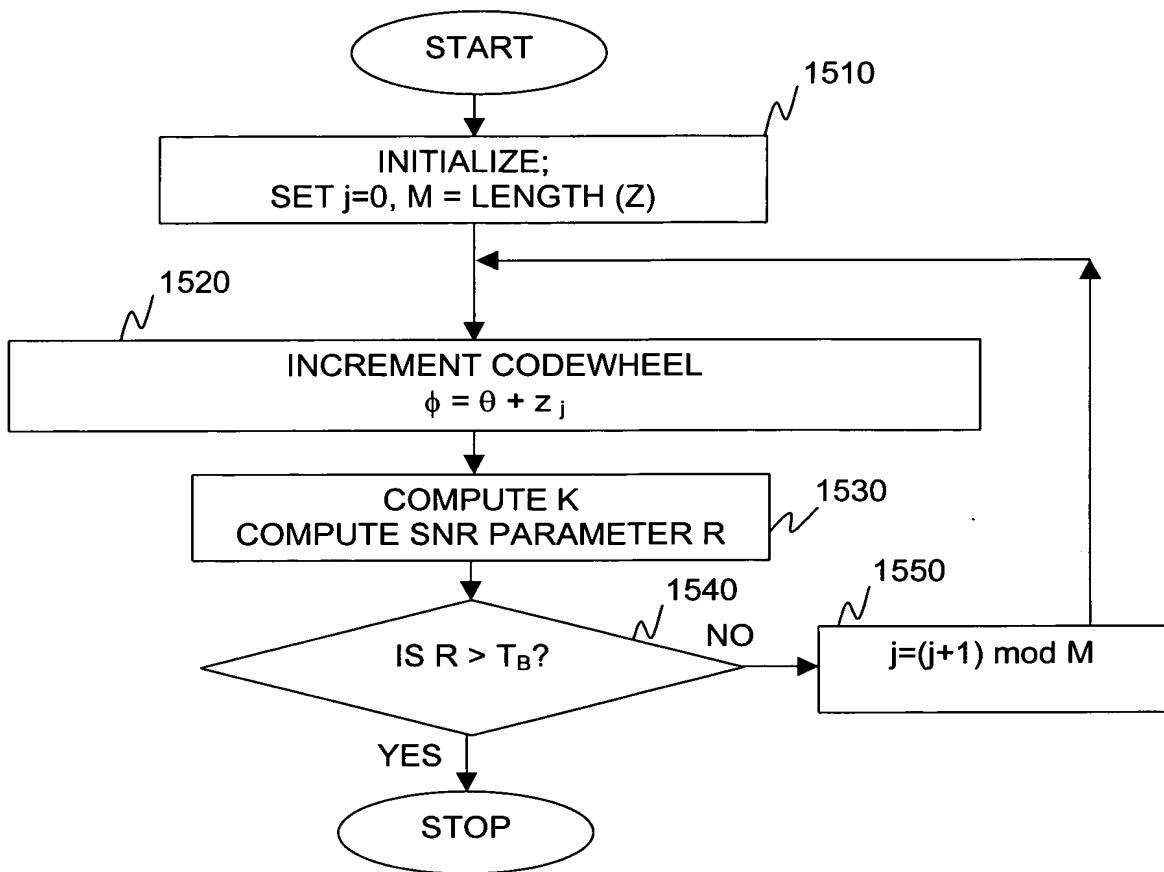
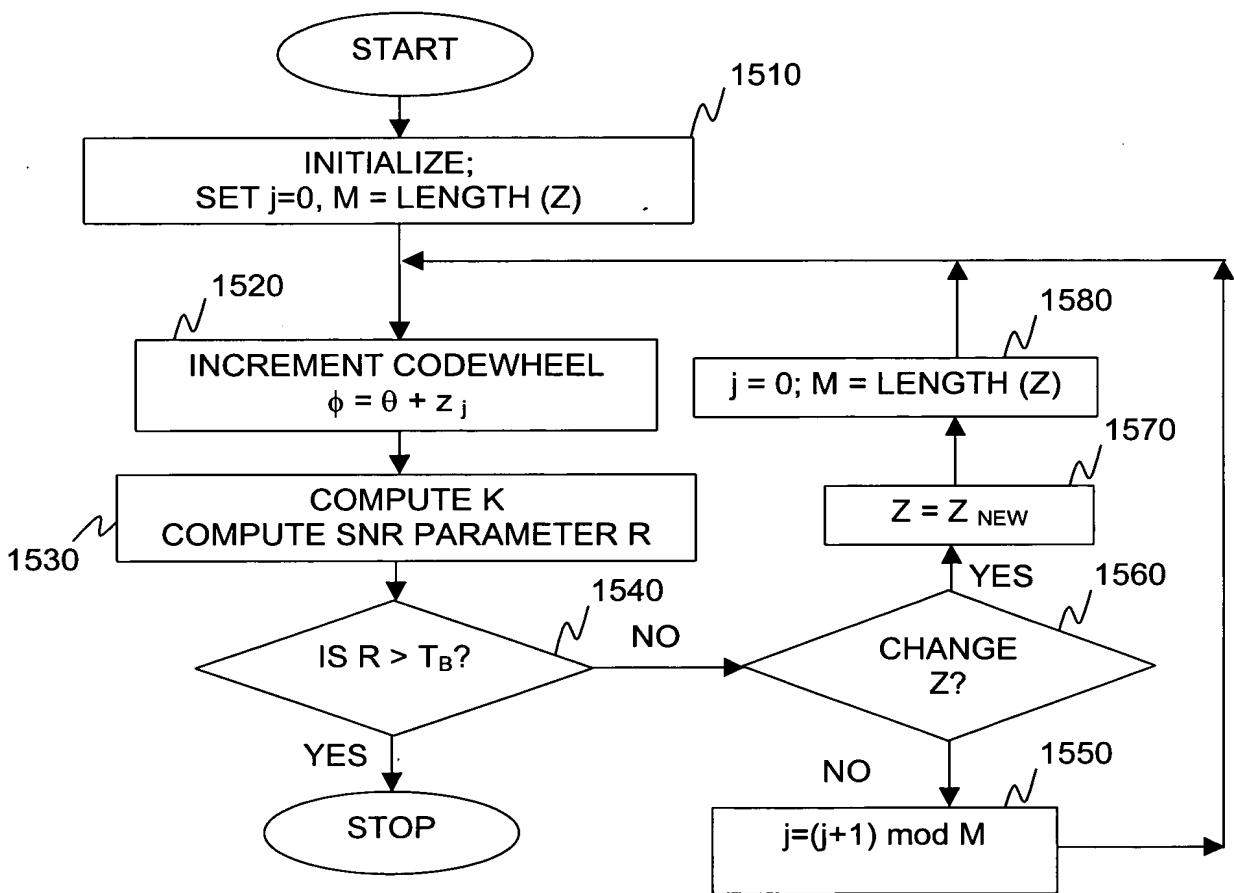


FIG. 13 12



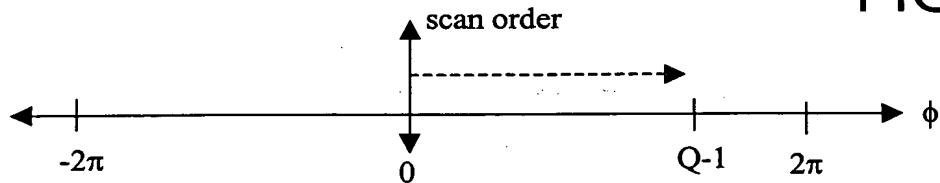
13
FIGURE 14A

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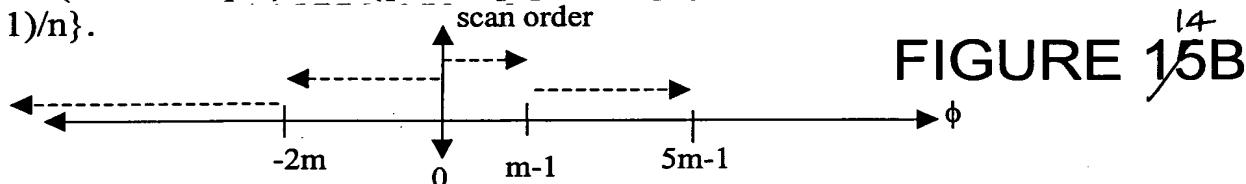
13
FIGURE 14B

$Z1 = \{0, n, 2n, 3n, \dots, Q-3, Q-2, Q-1\}$.



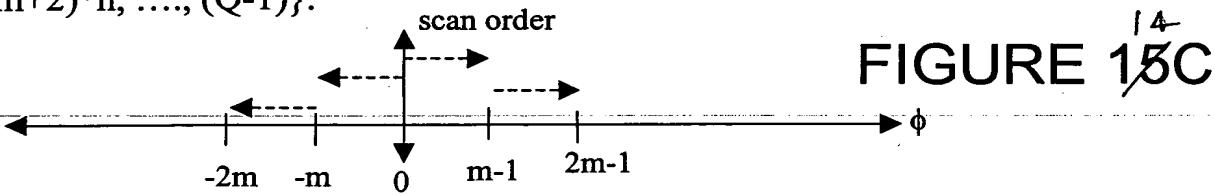
14
FIGURE 15A

$Z2$ (first example) = $n^* \{[0, m-1], [-1, -2m], [m, 5m-1], [-2m-1, -10m], \dots, (Q-1)/n\}$.



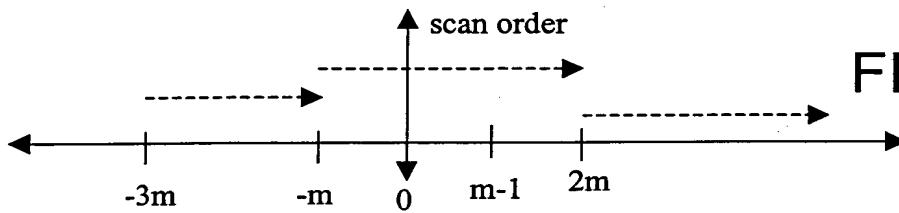
14
FIGURE 15B

$Z2$ (second example) = $\{0, n, 2n, \dots, (m-1)*n, -n, -2n, \dots, -m*n, m*n, (m+1)*n, (m+2)*n, \dots, (Q-1)\}$.



14
FIGURE 15C

$Z2$ (third example) = $\{-m*n, (-m+1)*n, (-m+2)*n, \dots, -n, 0, n, \dots, m*n, (m+1)*n, (m+2)*n, \dots, 2m*n, (-3m)*n, (-3m+1)*n, (-3m+2)*n, \dots, (-m-1)*n, (2m+1)*n, (2m+2)*n, \dots, (Q-1)\}$.



14
FIGURE 15D

14 14 14 14
 where, for FIGS. 15A, 15B, 15C, and 15D:

Q = total number of codewheel increments in each codewheel spin. The maximum codewheel spin is a complete (2π) codewheel spin, but other codewheel spins are available;

n = an arbitrary local parameter that controls how fast the code wheel spins depending on the time increment step size; and

m = a number of increments less than the total number of increments.

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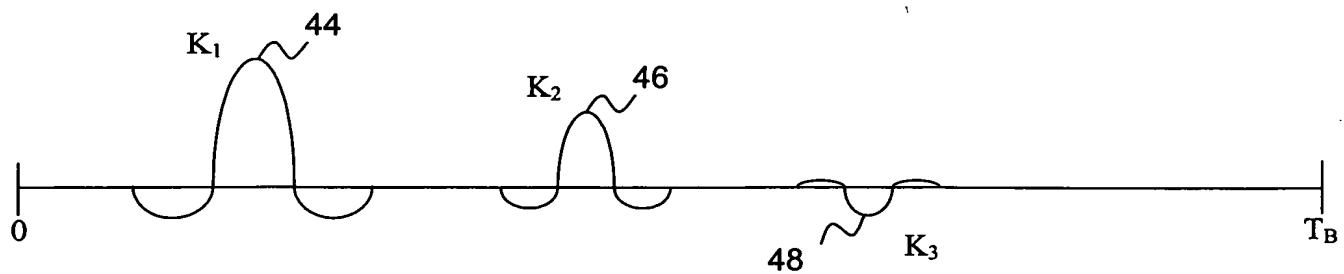
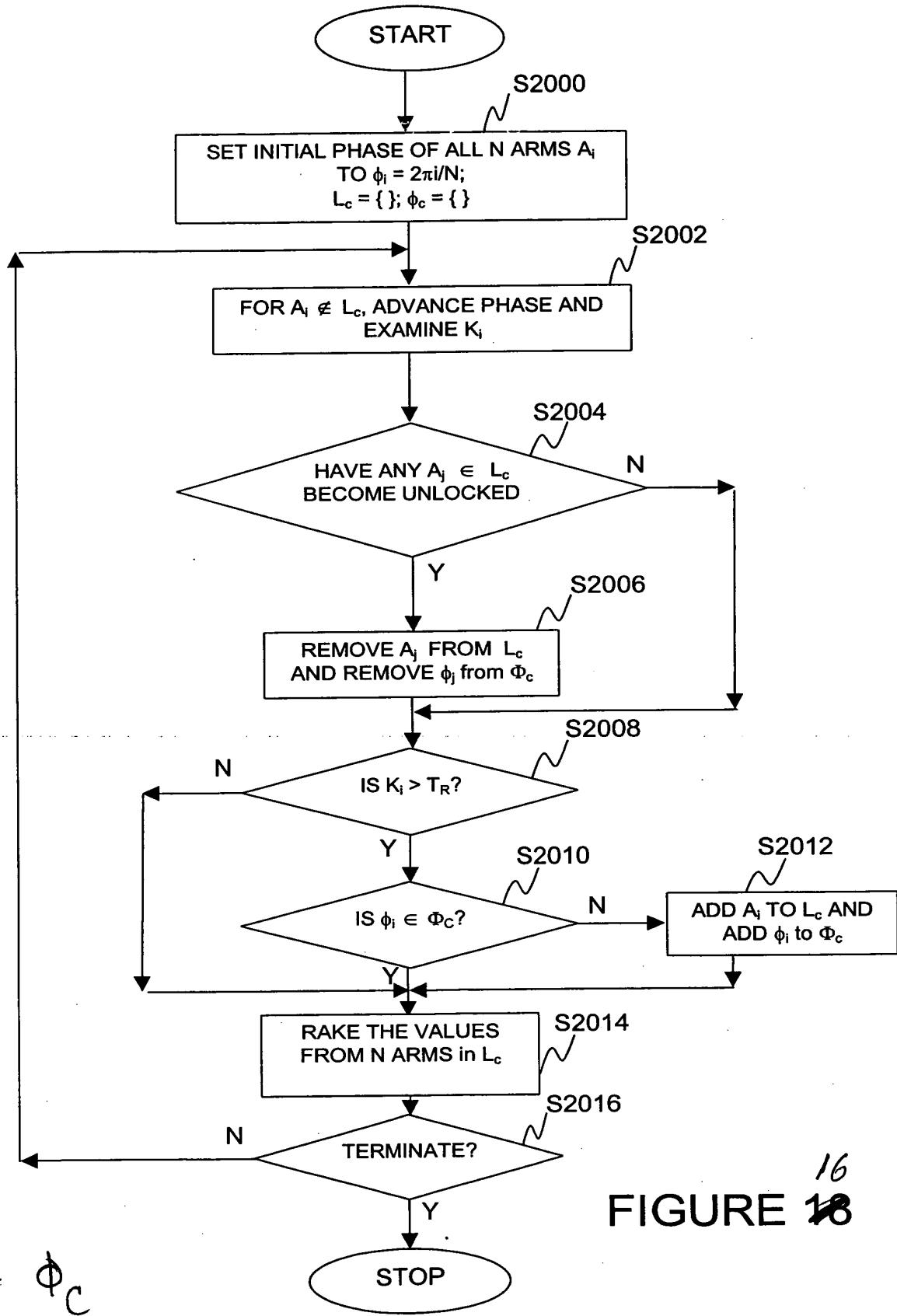


FIG. 15

t



$$\overline{\Phi}_c = \Phi_c$$

16
 FIGURE 18

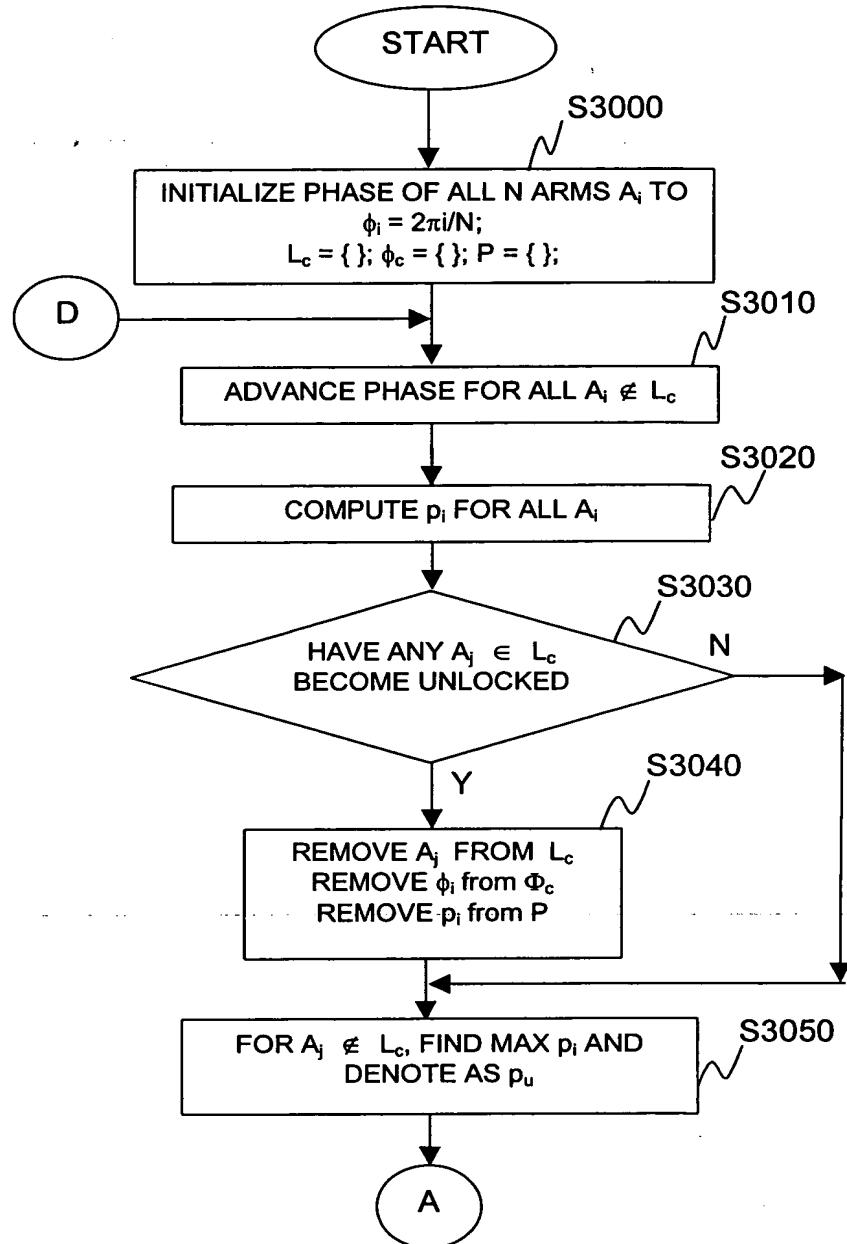
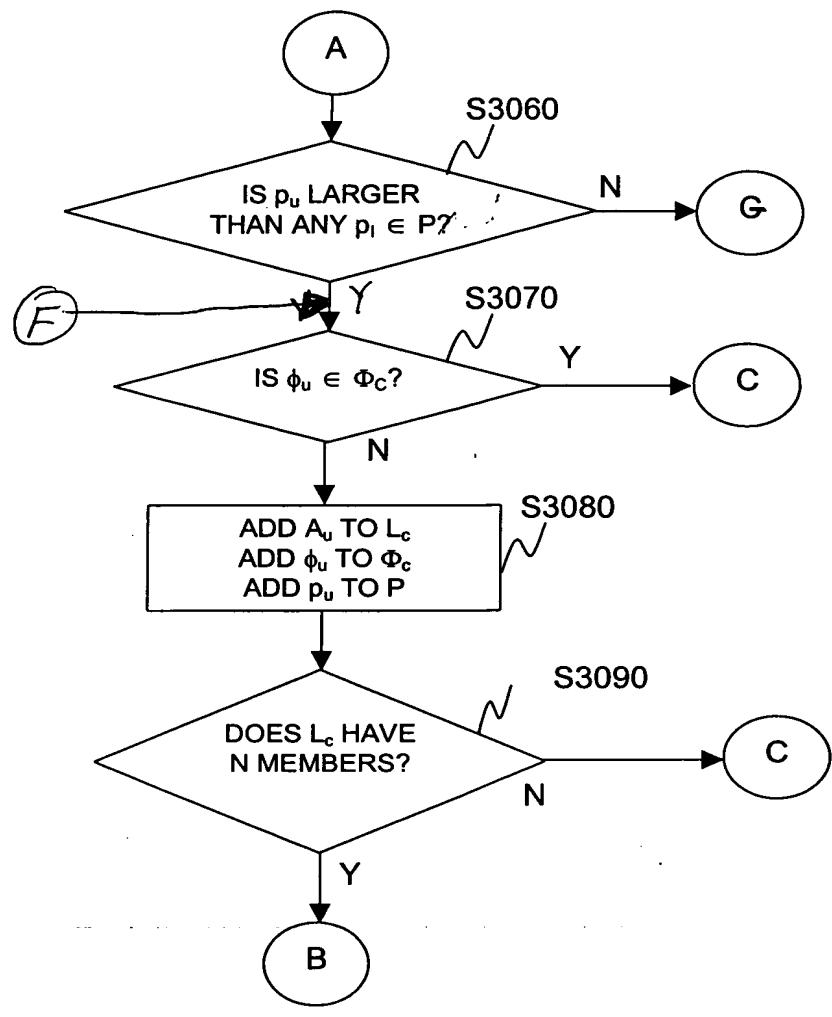
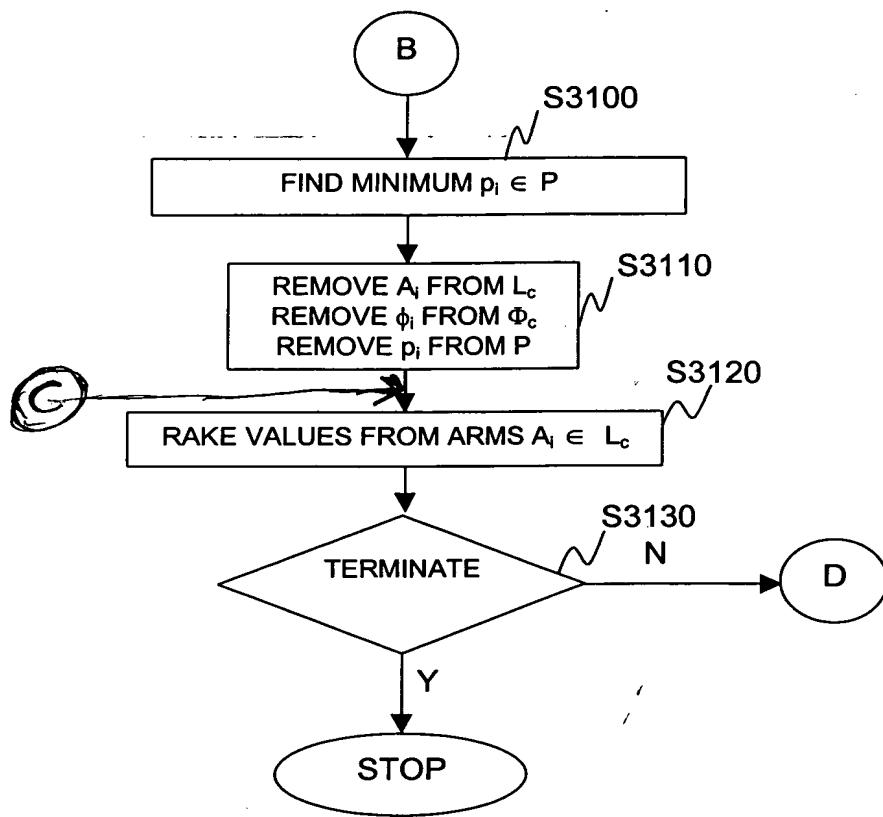


FIGURE ~~19~~ 17

Φ_c = φ_c



17
FIGURE ~~19~~ (CONT)



17
FIGURE 19 (CONT)

